CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 7, 2005 FILE REF: 4560

TO: Air Management Team

FROM: Jeffrey C. Hanson – Permits and Stationary Source Modeling Section Chief

SUBJECT: Updated[1] Policy for Transition from the ISCST3 dispersion model to AERMOD[2]

The United States Environmental Protection Agency (USEPA), in conjunction with the American Meteorological Society (AMS), formed AERMIC (AMS/EPA Regulatory Model Improvement Committee) in 1990 to develop a new generation of atmospheric dispersion models. The result of this collaboration is AERMOD (AERMIC Model). During this same period, the Energy Power Research Institute (EPRI) developed an enhanced downwash algorithm called PRIME (Plume Rise Model Enhancements) and inserted it into the Industrial Source Complex Short Term version 2 (ISCST2) model, thus creating the ISC-PRIME model.

In 2000, USEPA proposed the use of both models to replace the existing ISCST3 model. This was met with significant public comment from across the nation. In response to this, USEPA worked for three additional years and brought the PRIME downwash algorithm into AERMOD. A draft version was released during 2002, and USEPA made further refinements to the entire AERMOD modeling system through early 2005. On November 9, 2005, USEPA promulgated a formal change to the Guideline on Air Quality Models, listing AERMOD as the recommended dispersion model.

USEPA has included the following language on their web site. *"This rule becomes effective December 9, 2005. Beginning one year after the publication date the new model - AERMOD - should be used for appropriate application as replacement for ISC3. During this one-year period, protocols for modeling analyses based on ISC3 which are submitted in a timely manner may be approved at the discretion of the appropriate Reviewing Authority. Applicants are therefore encouraged to consult with the Reviewing Authority as soon as possible to assure acceptance during this period."*

The Stationary Source Modeling Team (SSMT) issued a policy memo on May 18, 2004 that addressed the transition from ISCST3 to AERMOD. Since Wisconsin performs modeling in-house (rather than consultant provided) it was necessary to provide firm dates for the use of AERMOD to the regulated community. Also, since 2004, new permit types have been introduced that require specific mention in the transition policy. Therefore, this memo replaces the May 18, 2004 memo. In order to develop this guidance memo, the SSMT met with a variety of consultants to get their thoughts on the transition. Their comments have been considered in the new transition policy with respect to each basic type of modeling analysis listed below.

[1] On May 18, 2004, the Air Management team approved guidance for establishing an AERMOD transition policy. This guidance is intended to update the previous guidance. This memo amends and replaces that which was distributed on May 18, 2004.

[2] This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

Construction Permits

Traditional Construction Permits (PSD and Minor NSR)

Beginning January 1, 2006, applications submitted to the Department should use AERMOD for the air quality review, unless prior agreement has been reached through a modeling protocol submitted by the company and on file with the Department by January 1, 2006[3]. PSD sources and minor facilities with operation permits should demonstrate full-facility compliance with all standards before issuance of the permit. Minor facilities that have not had an operation permit issued can be modeled for just the new source(s), or for the entire facility, at the reviewer's discretion.

General Construction Permits (minor NSR for FESOP or FOP sources)

Beginning January 1, 2006, general construction permit modeling should be performed using AERMOD. General construction permits issued prior to January 1, 2006 will not be revised.

Registration Construction Permits (minor NSR for FESOP or SOP sources)

Applicants for registration construction permits may continue to use SCREEN3 when modeling is needed (i.e. the facility cannot meet stack requirements), as described in the Registration Permit Application guidelines. Beginning January 1, 2006, applications submitted to the Department may use AERMOD or SCREEN3, at the discretion of the facility.

Operation Permits

Traditional Operation Permits (Title V, FESOP, SOP)

Beginning January 1, 2006 traditional operation permit projects received by the modeling team (regardless of application submittal date) should use AERMOD for the air quality review.

General Operation Permits (Title V, FESOP, SOP)

Beginning January 1, 2006, general operation permits should be developed using AERMOD. If a source no longer meets the requirement for an existing GOP, their new permit will be reviewed under the provisions of the transition plan for the specific type of permit.

Registration Operation Permits (FESOP, SOP)

Registration operation permits may continue to use SCREEN3 when modeling is needed (i.e. the facility cannot meet stack requirements), as described in the Registration Permit Application guidelines. Beginning January 1, 2006, applications submitted to the Department may use AERMOD or SCREEN3, at the discretion of the facility.

Permit Renewal (any type)

If emission rates and stack parameters have not changed since the last facility-wide modeling was conducted, and if there are no additional sources at the facility to be included in the renewed permit, then new modeling with AERMOD is not required. However, Air Management reserves the right to request modeling with AERMOD for any renewal.

NR 445 Compliance

An existing source of NR445 emissions attempting to demonstrate NR 445 compliance by the June 30, 2007 deadline may do so using SCREEN3, ISCST3, or AERMOD (beginning January 1, 2006). Beginning January 1, 2006 if a source applies for a construction permit, the facility should demonstrate compliance using AERMOD or SCREEN3. After June 30, 2007, all analyses involving NR445 compounds should use AERMOD or SCREEN3.

Other permit types developed after January 1, 2006 will use AERMOD in their review.

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[3] Submittal of a modeling protocol by January 1, 2006 for a specific traditional construction permit project does not guarantee acceptance of the use of ISCST3 over AERMOD. Each submittal will be subject to approval by the Department. Applicants are encouraged to contact the Department when considering a project whose timing may be affected by the AERMOD transition date.